UNITED STATES DISTRICT COURT FOR THE WESTERN DISTRICT OF TEXAS WACO DIVISION

ALIGN TECHNOLOGY, INC.,	
Plaintiff,	
v.	Case No. 6:24-cv-00187-ADA-DTG
CLEARCORRECT OPERATING, LLC, CLEARCORRECT HOLDINGS, INC., &	PATENT CASE
INSTITUT STRAUMANN AG,	JURY TRIAL DEMANDED
Defendants.	
CLEARCORRECT OPERATING, LLC, CLEARCORRECT HOLDINGS, INC., & STRAUMANN USA, LLC,	
Counterclaim-Plaintiffs,	
V.	
ALIGN TECHNOLOGY, INC.,	
Counterclaim-Defendant.	

ALIGN TECHNOLOGY, INC.'S RESPONSIVE CLAIM CONSTRUCTION BRIEF

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TABLE OF ABBREVIATIONS

Term	Abbreviation
Plaintiff and Counterclaim-Defendant Align	"Align"
Technology, Inc.	
Defendants and/or Counterclaim-Plaintiff's	"ClearCorrect"
ClearCorrect Operating LLC, ClearCorrect	
Holdings, Inc., Straumann USA LLC, and	
Institut Straumann AG	
U.S. Patent No. 8,038,444	"'444 patent" or "'444 pat."
U.S. Patent No. 11,369,456	"'456 patent" or "'456 pat."
U.S. Patent No. 10,791,936	"'936 patent" or "'936 pat."
ECF No. 1	"Compl."
ECF No. 121	"Br."
November 25, 2024, Declaration of Eric Kuo,	"Kuo Decl."
DDS (Ex. 1 to the November 25, 2024	
Declaration of Forrest McClellen)	
November 22, 2024, Declaration of Karan	"Singh Decl."
Singh, Ph.D (Ex. 2 to the November 25, 2024	
Declaration of Forrest McClellen)	

I. INTRODUCTION

The Court allowed ClearCorrect to brief 18 terms, more than the norm in this District. ECF No. 120. Nevertheless, ClearCorrect seeks constructions of terms only from Align's '444 and '456 treatment planning patents and '936 intraoral scanner patent. No terms are at issue from Align's six remaining asserted patents.

ClearCorrect's proposed constructions have no merit. For the '444 patent, ClearCorrect newly claims that "at least one of staggering and roundtripping" requires *both* staggering and roundtripping—even though, at ClearCorrect's request, the Patent Trial and Appeal Board ("PTAB") previously determined the opposite. For "optimal number of stages," ClearCorrect asks the Court to ignore the '444 patent's definition and find the phrase indefinite. For the four "pattern" terms from the '444 and '456 patents, ClearCorrect proposes constructions that exclude preferred embodiments. And for the ten means-plus-function claim terms, ClearCorrect asserts that all are indefinite despite the ample corresponding structure in the specification for each.

For the '936 patent, only two terms are at issue. ClearCorrect's proposed construction for the first, which involves "replacing" part of a virtual model of a patient's teeth, conflicts with the '936 patent's claims and specification. Its construction for the second, "second scan data of the patient's teeth," misapplies the doctrine of prosecution disclaimer. Disclaimer must be "clear and unmistakable," and Align's prior statements were anything but. The Court should find Align's claims not invalid, reject ClearCorrect's constructions, and adopt Align's.

II. ARGUMENT

A. U.S. Patent Nos. 8,038,444 & 11,369,456

Determining how and when a patient's teeth should move to achieve their final, desired positions during treatment with orthodontics is called "treatment planning." Align has extensive experience in this field. In 1998, for example, Align sought patent protection for advancements

in "generat[ing] treatment paths along which the teeth will move from the initial positions to the final positions." *See*, *e.g.*, Ex. A¹ at 4:9-10. In 2006, Align filed the applications disclosing treatment planning advancements that matured into the asserted '444 and '456 patents.

The '444 and '456 patents disclose and claim new "staggering" and "round-tripping"² techniques. *See, e.g.*, '444 pat., cl. 1. ClearCorrect well knows this. *Contra* Br. at 4. In 2018, the PTAB declined to institute *inter partes* review of Align's '444 patent despite ClearCorrect's contention that these techniques were obvious. *See* Ex. C at 11-17. The '444 and '456 patents also disclose and claim (i) integrating these novel "staggering" and "round-tripping" techniques with "patterns" for ordering *when* each tooth moves during treatment and (ii) certain collision avoidance algorithms. *E.g.*, '444 pat., cl. 7 (claiming exemplary "all-equal" pattern), cl. 15 (claiming means for determining an order of movement). The parties dispute the meaning of five terms from these patents and whether ClearCorrect has proven another eleven terms to be indefinite by clear and convincing evidence. Br. at 5-36.

1. "through at least one of staggering and roundtripping of at least one dental object" ('444 patent, cls. 1-14)

Align's Construction	ClearCorrect's Construction
"by staggering or roundtripping at least one dental object"	"through assessment of both staggering and roundtripping with respect to avoiding collisions with or obstructions between at least one dental object"

"Through at least one of staggering and roundtripping of at least one dental object"

2

¹ Lettered exhibits refer to those attached to Jerry Salvatore's declaration (ECF No. 121-1). Numbered exhibits refer to those attached to Forrest McClellen's declaration filed today.

² The '444 patent expressly defines both terms. "Staggering' is the process of delaying one or more teeth from moving one or more stages where it would otherwise move in order to prevent another tooth from colliding with and/or obstructing the path of the delayed tooth. . . . 'Round-tripping' is the technique of moving a first tooth out of the path of a second tooth, and once the second tooth has moved sufficiently, moving the first tooth back to its previous position before proceeding to a desired final position of that first tooth." '444 pat., 12:44-55.

allows staggering, roundtripping, or both. This is consistent with the plain language, specification, and case law.

The '444 patent claims 1-14 are directed to computer implemented treatment planning methods. The claimed methods include receiving electronic representations of the teeth (dental objects) in relation to one another as well as a desired final position for each tooth. They also include determining an order of movement for the dental objects such that they avoid colliding with or obstructing each other. The order of movement is determined "through *at least one of* staggering *and* round-tripping of at least one dental object." '444 pat. cl. 1 (emphasis added).

The specification repeatedly explains that the claimed methods permit using staggering, round-tripping, or both. For example, it states:

[I]n cases where teeth may collide or obstruct one another during movement, the program is configured to suitably stagger, slow down and/or plan-round tripping for the teeth movement . . . such staggering, slowing down and/or round-tripping can be suitably applied *alone or in combination, and in any order*."

'444 pat., 12:41-57 (emphasis added); *see also* 2:6-18; 6:39-43; 8:4-9; 9:30-33; 10:39-41; 11:53-57; 14:63-15:3; Fig. 2B.

The phrase "through at least one of staggering and round-tripping of at least one dental object" therefore should be construed disjunctively, such that staggering, round-tripping, or both techniques can be used. *See, e.g., 3rd Eye Surveillance, LLC v. United States*, 140 Fed. Cl. 39, 68-69 (Fed. Cl. 2018) (emphasis added) (construing "based on *at least one of* the additional information *and* the imagery data" disjunctively to require "one or more additional information, one or more imagery data, or one or more of both"); *see also Radware Ltd. v. AIO Networks, Inc.*, No. 13-cv-2021-RMW, 2014 WL 1572644, at *6-7 (N.D. Cal. Apr. 18, 2014).

In its IPR Petition challenging the '444 patent, ClearCorrect argued for precisely the interpretation that Align now advances. ClearCorrect contended that the claim language was

"equivalent to a Markush group" and, "accordingly, disclosure of *either* staggering *or* round-tripping is sufficient to meet this element." IPR2017-01829, Paper 1 at 18 (emphasis added).

ClearCorrect now advances the opposite view, arguing that the Federal Circuit's decision in *SuperGuide Corp. v. DirecTV Enterprises, Inc.*, 358 F.3d 870, 886 (Fed. Cir. 2004) mandates a conjunctive interpretation of the term. But ClearCorrect misreads *SuperGuide*, which did not create a "per se rule that the use of 'at least one of' followed by 'and' connotes a conjunctive list." *3rd Eye Surveillance*, 140 Fed. Cl. at 69-70.

The Federal Circuit decided *SuperGuide* on its specific facts, which involved a meansplus-function claim that required selecting from a set of multiple categories. In "every disclosed embodiment," the specification taught that "the user must choose a value for each designated category." *SuperGuide*, 358 F.3d at 887. Unlike the *SuperGuide* patent specification, the specification here never mandates using both "staggering" and "roundtripping." And unlike the *SuperGuide* claim, the claimed process claim here includes a step with only two options.

Multiple courts have declined to apply *SuperGuide* in similar situations, instead construing the phrase "at least one of" used with the word "and" disjunctively. For example, in *3rd Eye Surveillance*, the court considered the phrase "based on *at least one of* the additional information *and* the imagery data." 140 Fed. Cl. at 69-70 (emphasis added). It declined to apply *SuperGuide* to interpret the phrase disjunctively, explaining:

[T]he duality of the term ["at least one of"] makes it a binary choice between two options – not a list giving rise to the confusion present in *SuperGuide*. The use of "and" is shorthand for preserving the option that both the additional information and imagery data could be used in the security system process.

Id. The court in *Radware* reached the same conclusion. It distinguished *Superguide* as "involv[ing] selecting from a set of more than two items." 2014 WL 1572644, at *6-7.

As ClearCorrect acknowledges, the PTAB previously reached the same conclusion

during the '444 IPR proceeding. Construing the claim disjunctively, the PTAB rejected Align's argument for a narrower construction:

We determine that the claims in *SuperGuide* . . . are distinguishable from claims 1-14 of the '444 Patent . . . [F]irst, the claim construction in *SuperGuide* was fact specific. Second, claim 1 in *Superguide* . . . used means-plus-function language which requires corresponding structure for the full algorithm, and thus a computer configured to effect the claimed functions would need to be programmed for both options. When 35 U.S.C. § 112 ¶ 6 is invoked, the corresponding computer structure must be a "special purpose computer programmed to perform the disclosed algorithm."

In contrast, the process of claim 1 in the '444 patent is a series of steps for staging a plurality of dental objects which we construe as being accomplished by one of "staggering" and "round-tripping." Our construction here is consistent with the '444 patent's [s]pecification describing that teeth "may be 'staggered,' round-tripped,' and/or slowed."

Ex. C at 8-9 (original emphasis and internal citations omitted).

Contrary to ClearCorrect's argument, Align is not barred from advancing a broader construction now. As another court has explained, "It would be inequitable to the patentee [i.e., Align] to apply prosecution disclaimer in [this] scenario[,] because the potential infringer could use disclaimer to argue for the narrower construction for infringement purposes even though the agency has *already* rejected that construction." *Power Integrations, Inc. v. ON Semiconductor Corp.*, 396 F. Supp. 3d 851, 864 (N.D. Cal. 2019) (emphasis in original); *see also Motiva Patents, LLC v. Sony Corp.*, No. 9:18-CV-180-JRG-KFG, 2019 WL 3933670, at *19-20 (E.D. Tex. Aug. 20, 2019); *Vertical Tank, Inc. v. Vertical Tank, Inc., v. BakerCorp Corp.*, No. 118-CV-00145-LJO-JLT, 2019 WL 2207668, at *11–12 (E.D. Cal. May 22, 2019). That is precisely what the potential infringer, ClearCorrect, attempts here.

Nor does the PTAB's prior use of the "broadest reasonable interpretation" ("BRI") standard require a narrow construction now, as ClearCorrect contends. ClearCorrect does not explain how *SuperGuide*'s application (or not) here turns on whether the BRI or *Philips* standard

applies. During the '444 IPR proceeding, the PTAB never distinguished *SuperGuide* on that basis. Instead, as noted, the PTAB distinguished *SuperGuide* on its "fact[-]specific" nature and use of means-plus-function language requiring multiple functional categories as corresponding structure. Having distinguished *SuperGuide*, the PTAB then concluded that *either* "staggering" or "roundtripping" sufficed. Ex. C at 8-9.

2. "optimal number of stages for the order of movement of the dental objects" ('444 patent, cls. 5, 19, 33)

Align's Construction	ClearCorrect's Construction
"the largest number of the minimum stages needed to place the patient's teeth in their final, desired position"	Indefinite

"[A] patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014). While the definiteness requirement "mandates clarity," it "recogniz[es] that absolute precision is unattainable." *Id.* at 910. A claim employing a term of degree is definite "where it provide[s] enough certainty to one of skill in the art when read in the context of the invention." *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1370 (Fed. Cir. 2014).

Here, the phrase "optimal number of stages for the order of movement of the dental objects" is not indefinite because the specification and claims explain its meaning. ClearCorrect fails to meet its heavy burden to show indefiniteness by clear and convincing evidence.

a) "Optimal number of stages" is not indefinite because the '444 patent defines it and explains how to determine the "optimal number."

A skilled artisan would understand the meaning of "optimal number of stages" with "reasonable certainty" because the '444 patent defines the term and explains how to determine

the "optimal number of stages." The patent explains that the "optimal number of stages" is the "largest number of the minimum stages needed to place the patient's teeth in their final, desired position." '444 pat., 15:9-12, cls. 6, 20, 34; Kuo Decl. ¶¶ 24-30. It immediately follows that explanation (at 15:12-20) with an example of making that determination:

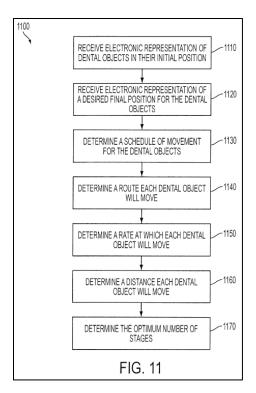
For example, patient has three teeth that need to be moved during treatment, wherein the first tooth needs 4 stages to move to its final position, the second tooth needs 9 stages to move to its final position, and the third tooth needs 6 stages to move to its final position. Assuming each of these teeth is scheduled to begin moving at the same stage, the optimum number of stages is 9 since this is the minimum number of stages needed to place all of the teeth in their final position.

'444 pat., 15:12-20.

The '444 patent further explains how to determine the minimum number of stages needed to place the teeth in their final position. 444 pat., 14:59-61. The specification explains that several factors are considered, including "determining a route for each of the patient's teeth," "determining a rate each tooth will move," "determining a distance each tooth will need to travel to reach its final position," and "factoring any staggering, slowing down/interim key framing,

and/or round-tripping needed to place the patient's teeth in their desired final position." *Id.*, 14:40-65. Figure 11 (below right) depicts a flow chart with these steps leading to a determination of "optimal number of stages":

Other paragraphs and figures describe treatment plans with "the optimum number of stages needed." *Id.*, 14:65-15:3. These exemplary treatment plans "factor[] in the type of pattern needed, the rate, the path, the distance, staggering, slowing down/interim key framing, and/or round-tripping in determining the optimum number of



stages for treating the patient's teeth." *Id.*, 14:65-15:3, Figs. 3-9. The specification also explains how to assess these factors, *e.g.*, by explaining how to select a treatment pattern. *E.g.*, *id.*, 5:41-67 (describing using "A-shaped" pattern if a patient's teeth have gaps, "V-shaped" pattern if teeth are crowded, or "mid-line shift" pattern if teeth are skewed to the left or right of the patient's mid-line).

A treatment plan can be prepared with these factors. Kuo Decl. ¶¶25-29. The number of stages each tooth requires then can be determined and the "largest of the minimum number" of those stages selected. *Id.* ¶ 29. As the skilled artisan would understand the scope and meaning of the phrase "optimal number of stages for the order of movement of the dental objects," it is not indefinite.

b) "Optimal" staging is not a "purely subjective" term.

ClearCorrect tries to inject uncertainty by arguing that there is (1) no single definition of "optimal" in orthodontics and (2) no way to objectively determine whether any number of stages is "optimal" and thus within the scope of the claim. ClearCorrect's positions are inconsistent with the intrinsic evidence, the extrinsic evidence, and the law.

First, ClearCorrect's argument that "there is no single definition of optimality in orthodontics" and its reliance on dictionary definitions to "show that the term requires a determination of what is best, most favorable, or most desirable" is divorced from the context of the claims and specification. Reading the patent in context, a skilled person would understand that term means "the largest number of the minimum stages needed to place the patient's teeth in their final, desired position." '444 pat., 15:9-12, cls. 6, 20, 34; Kuo Decl. ¶¶ 23-37.

ClearCorrect previously conceded this. In its IPR petition for the '444 patent,

ClearCorrect accepted and pressed for the same definition of "optimal number of stages" that

Align now advances. ClearCorrect submitted a declaration from its expert and Chief Technology

Officer James Mah, an orthodontist. Dr. Mah explained, under oath, that the "optimal" number of stages "necessarily" is the largest of the minimum number of stages of tooth movements:

[I]n order to determine the number of stages of the entire orthodontic treatment plan for a patient—and therefore be able to determine the number of aligner appliances to fabricate for that patient—one of ordinary skill in the art would further have necessarily selected the largest of the minimum number of stages of tooth movements as the optimal number of stages. In other words, the "largest" of the minimum number of stages simply represents the minimum number of stages required for all teeth to reach their final goal in the treatment plan. This number would necessarily be used as the "optimal" number because (a) including any additional unneeded stages would not involve any tooth movements and would not make any sense, and (b) using a smaller number of stages would omit at least one movement stage of one of the teeth and would result in an incomplete orthodontic treatment plan."

Ex. 5 at 61-62 (emphasis added).

ClearCorrect also argued that it was "well known in the art" that "optimizing the number of stages was a key aspect of determining a treatment plan," that the art disclosed "optimizing tooth paths (and thus number of stages) to move teeth in quickest fashion," and that "the '444 patent['s] [claims] are directed to a widespread and common notion: generating an optimal orthodontic treatment path for use with clear, plastic 'aligners." IPR2017-01829, Paper 1 at 1, 31, 53. ClearCorrect thus admitted that "optimal number of stages" has a specific meaning that the skilled artisan understands and can apply. It is not a subjective determination of whether something is "most favorable or desirable," "the best," or "satisfactory." *Contra* Br. at 11.

ClearCorrect's cited cases are plainly inapposite. Both *Datamize, LLC v. Plumtree*Software, Inc., and Interval Licensing LLC v. AOL, Inc., involved terms that were "purely subjective," in the sense that they turned on a person's tastes or opinion. Datamize dealt with claims to an "aesthetically pleasing" look and feel for interface screens. 417 F.3d 1342, 1345 (Fed. Cir. 2005). Interval involved a claim related to displaying content "in an unobtrusive manner that does not distract a user." 766 F.3d 1364, 1367-68 (Fed. Cir. 2014). Similarly, in

Network Sys. Tech., LLC v. Texas Instruments, Inc., nothing suggested that "optimal amount of data to be buffered" had a specific meaning in the specification or the field. Instead, the plaintiffs cited to a dictionary definition of "optimum" as "most favorable or desirable" and circularly argued that "optimal amount of data to be buffered" means "the amount of data that is optimal under certain conditions." Ex. V at 53-54.. Align does neither here.

Second, determining an "optimal number of stages" does not require a "purely subjective" analysis of many different factors. Although determining a treatment plan may involve multiple factors, those factors are *objective*. For example, the positions of a patient's teeth are objective inputs into a treatment plan. Kuo Decl. ¶ 28. The appropriate rate and range of tooth movement are also based on objective clinical practice norms. *Id.* As discussed above, the number of stages needed for each tooth can be determined based on these factors. *Id.*, ¶ 29. The "largest of the minimum number" of stages can be objectively identified once a treatment plan has been created. *Id.*, \P 29, 35-36.

Thus, whether a treatment plan uses the "largest of the minimum number of stages" provides an objective baseline by which to understand the term "optimal." As the case law makes clear, nothing more is required. For example, in *Sonix Tech. Co., Ltd. v. Publications*Int'l, Ltd., the Federal Circuit held that the subjective term "visually negligible" was sufficiently definite. It explained that "whether something is 'visually negligible' or interferes with a user's perception . . . involve[s] what can be seen with the normal human eye." 844 F.3d 1370, 1378 (Fed. Cir. 2017). That "provide[d] an objective baseline through which to interpret the claims."

Id. "Thus, although the term may be a term of degree, it [was] not 'purely subjective.'"

Likewise, in InfoGation Corp. v. ZTE Corp., the court held the term "optimal route" to not be indefinite. The court noted that the specification described calculating a route "based on certain

objective criteria[,] such as travelling conditions or user preferences." No. 16-cv-01901-H-JLB, 2017 WL 1821402 at *12 (S.D. Cal. May 5, 2017). Citing *Sonix*, the court explained that this provided an "objective baseline through which to interpret the claims."

c) ClearCorrect's other scattershot arguments fail.

ClearCorrect disputes whether the '444 patent's discussion of "optimal" staging is definitional. Per ClearCorrect, the specification's discussion of the "optimal number of stages" was "merely [to provide] one way to determine the optimum number of stages," not to define "what 'an optimal number of stages' means." Br. at 12. Not so. Only one portion of the specification says what "optimum number of stages" "is." That portion states that the "optimum number of stages is the largest number of the minimum stages needed to place the patient's teeth in their final, desired position." '444 pat., 15:9-12 (emphasis added).

ClearCorrect also falsely accuses Align's proposed definition of importing limitations from dependent claims. It does not. Dependent claims 6, 20, and 34 clarify that determining the "optimal number of stages," involves determining and adding a "number of movement stages" and a "number of non-movement stages" to "determine a minimum number of stages." Only then is "largest of the minimum number of stages" selected. Read in context, the dependent claims underscore—not contradict—the interchangeable nature of the phrases "optimal number of stages" and "largest of the minimum number of stages." As in the specification itself, claims 5, 19, and 33 and their dependent claims 6, 20, and 34 use the two phrases synonymously.

Finally, ClearCorrect is wrong that the prosecution history of a related patent proves indefiniteness. As ClearCorrect notes, the Examiner in other proceedings alleged that "optimal is a term of degree as applied to orthodontics" and that it was "unclear" what constituted an "optimal number of stages in orthodontic treatment." Br. at 10-11. As ClearCorrect also notes, however, Align did *not* agree with the Examiner's position. Instead, Align amended the claims

to "eliminate the recitation of optimal" and moot the Examiner's rejection entirely. Br. at 11.

Regardless, whether "optimal number of stages" is understandable in the context of the '444 patent (*not* a different patent) is the question here. Tellingly, ClearCorrect cannot reconcile its own CTO's ability to understand and interpret the phrase "optimal number of stages" in the '444 IPR proceeding with its reliance on the Examiner's (mistaken) position during prosecution of a different patent. Its CTO's lack of "apparent difficulty in determining the scope" of the phrase confirms that it is not indefinite. *Sonix*, 844 F.3d 1370 (Fed. Cir. 2017) (parties' and experts' ability to understand and apply claim term supported its definiteness).

3. Pattern Terms

ClearCorrect seeks to narrow four "pattern" terms—"V-shaped" pattern," "A-shaped pattern," "M-shaped pattern," and "mid-line shift pattern"—to specific embodiments in the specification. Br. at 13-18. The Court should reject ClearCorrect's constructions because they deviate from these term's plain meanings and would exclude preferred embodiments.

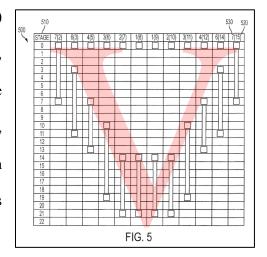
a) "V-shaped pattern" ('444 patent, cls. 8, 22, 36; '456, cl. 3)

Align's Construction	ClearCorrect's Construction
No construction necessary (plain and ordinary meaning)	"A pattern where teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach their final position, and where the most posterior-positioned teeth move first (e.g., the molars, or teeth in position 7 and/or 8) then the next anterior-positioned teeth move sequentially until all of the teeth reach their final position, with the next anterior-positioned tooth not scheduled to begin moving until at least approximately the half-way stage of its respective posterior positioned tooth"

The Court should assign this phrase its plain and ordinary meaning: a pattern in the shape of a "V." That is how the specification uses the phrase.

The specification explains that Figure 5 "illustrat[es] an example of a "V-shaped" pattern.

444 pat., 9:42-44. As the figure shows (annotated at right) this takes the shape of the letter "V." From this disclosure, a skilled artisan familiar with the letter "V" would have understood what a "V-shaped" pattern meant. Kuo Decl., ¶¶ 41-45. Whether the phrase "V-shaped pattern" was in widespread use among orthodontists (or not) circa 2006 is beside the point. Br. at 15; *see also* Kuo Decl., ¶¶ 38-40.



ClearCorrect's contrary argument—that the specification defines this term differently than its plain and ordinary meaning—fails. To depart from the plain and ordinary meaning via lexicography, a patentee must "clearly express an intent" to do so. *Thorner v. Sony Comp. Entm't Amer. LLC*, 669 F.3d 1362, 1366 (Fed. Cir. 2012). ClearCorrect makes no showing of such clear intent. The passage on which it relies for its lengthy construction of a "V-shaped pattern" describes its description as "exemplary," not lexicographic. '444 pat., 9:12-26. ClearCorrect's proposed construction thus violates the canon of claim construction against limiting a construction to a specific embodiment. *See Kaneka Corp. v. Xiamen Kingdomway Grp. Co.*, 790 F.3d 1298, 1306 (Fed. Cir. 2015) ("[W]e must be cautious not to import preferred limitations into the claims").

Worse, ClearCorrect's proposed construction excludes a preferred embodiment, which is "rarely, if ever, correct." *Id.* at 1304. Per ClearCorrect's construction, each tooth only begins moving after the next most-posterior tooth. But in Figure 5, all of teeth 2(7), 1(8), 1(9), and 2(10) move at once—even though teeth 1(8) and 1(9) are anterior to teeth 2(7) and 2(10). *See* 444 pat., 9:42-44, Fig. 5. Thus, the '444 patent recites two V-shaped patterns—not one—but

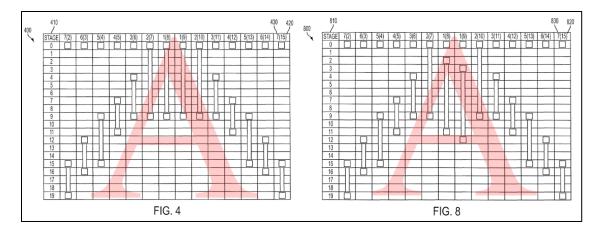
ClearCorrect's construction inappropriately excludes one of them.

Finally, the specification's use of quotation marks around "V-shaped pattern" makes no difference. Br. at 17-18. Although quotation marks can indicate that what follows is a definition, they are not dispositive. *See Karmagreen, LLC v. MRSS Inc.*, No. 21-cv-674-WMR, 2021 WL 8268144, at *3 (N.D. Ga. Dec. 8, 2021) ("[T]ypically there must be something else besides just the quotations or parentheticals to support the redefinition argument"). Here, virtually every mention of the "V-shaped" pattern appears in quotation marks. *See, e.g.*, '444 pat., 2:45, 5:50, 9:14-19, 9:42. The specification uses the quotation marks for emphasis, not to signal a definition. The Court thus should reject ClearCorrect's construction.

b) "A-shaped pattern" ('444 patent, cls. 9, 23, 37; '456, cl. 3)

Align's	ClearCorrect's Construction
Construction	
No construction necessary (plain and ordinary meaning)	"A pattern where teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach their final position, with the most anterior-positioned teeth (e.g., the incisors, or teeth in positions 1 and/or 2) moving first and then the next posterior-positioned teeth sequentially moving until all of the teeth reach their final position"

The Court should give this phrase its plain and ordinary meaning for the same reasons as the "V-shaped pattern." Here, too, the specification uses "A-shaped pattern" per its plain and ordinary meaning" to refer to a pattern shaped like an "A." For example, it identifies Figures 4, 8, and 9 as examples of "A-shaped" patterns. '444 pat., 8:26-28, 12:66-67, 13:35-36. As annotated Figures 4 and 8 below depict, the patterns have the shape of the letter "A":



'444 pat., Figs. 4, 8 (annotated). As with the "V-shaped pattern," a skilled artisan familiar with the letter "A" would have had no difficulty understanding the phrase. Kuo Decl., ¶¶ 46-48.

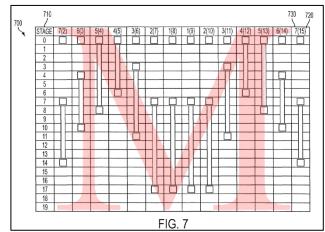
ClearCorrect's contrary arguments are identical to those for the "V-shaped pattern," and they fail for the same reasons. Again, the specification identifies ClearCorrect's purported definition as "exemplary." '444 pat., 7:50. And again, ClearCorrect's construction would improperly exclude a preferred embodiment. ClearCorrect's construction would require that the "most anterior-positioned teeth" to move first. In Figure 8's A-shaped pattern, however, the most-anterior positioned teeth 1(8) and 1(9) move only after the second-most-anterior positioned teeth 2(7) and 2(10). See id., Fig. 8; see also id. Fig. 9 (tooth 1(8) moves after tooth 3(6)). Finally, and again, the specification uses "A-shaped pattern" in quotes throughout for emphasis, not to denote a definition. See, e.g., '444 pat., 2:42, 5:47, 7:47-54, 8:27.

c) "M-shaped pattern" ('444 patent, cls. 10, 24, 38; '456, cl. 3)

Align's Construction	ClearCorrect's Construction
No construction necessary (plain and ordinary meaning)	"A pattern where teeth having the same and/or similar positions on the arch will be moved beginning at the same stage, and will move continuously until they reach their final position, with teeth between the anterior teeth and the posterior teeth (<i>e.g.</i> , the bicuspids, or teeth in positions 4 and/or 5) and both the adjacent anterior and/or adjacent posterior teeth then sequentially moving until all of the teeth reach their final position"

The Court should give this term its plain and ordinary meaning for the same reasons as the preceding terms. Here, too, the specification uses "M-shaped pattern" per its plain and ordinary meaning" to refer to a pattern shaped like an "M." The specification identifies Figure 7 as depicting an exemplary "M-shaped" pattern. '444 pat., 12:7-9. As Figure 7 (annotated right)

depicts, the pattern is the shape of the letter "M." As with the "V-" and "A-shaped patterns," a skilled artisan familiar with the letter "M" would have had no difficulty understanding what the phrase "M-shaped pattern" meant. Kuo Decl., ¶¶ 49-51.



ClearCorrect's contrary arguments fail for the same reasons as for the "V-" and "A-shaped patterns" above. Again, the specification identifies ClearCorrect's purported definition as "exemplary." '444 pat., 11:44. And again, ClearCorrect's construction would improperly exclude a preferred embodiment. Rather than moving "sequentially" as ClearCorrect's construction requires, teeth 2(7), 1(8), 1(9), 2(10) in Figure 7's "M-shaped pattern" move simultaneously. *Id.*, Fig. 7. And again, the specification uses "M-shaped pattern" in quotes for emphasis, not to denote a definition. *See, e.g.*, '444 pat., 2:54, 5:49, 11:43-48, 12:8.

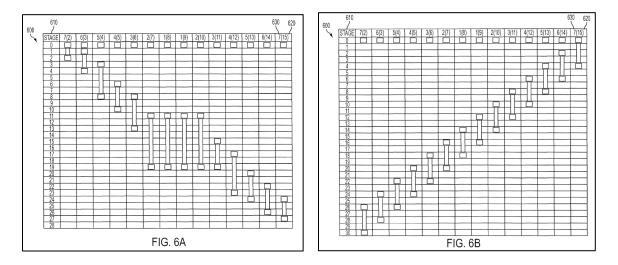
d) "mid-line shift pattern" ('444 patent, cls. 11, 25, 39; '456 patent, cl. 3)

Align's Construction	ClearCorrect's Construction
No construction necessary (plain and ordinary meaning)	"A pattern where tooth movement begins on one side of the patient's arch to center the teeth with respective [sic] to the midline of the patient's mouth, with the next tooth/teeth to move not scheduled to begin moving until at least approximately the half way stage of its respective previously scheduled tooth/teeth"

Unlike the preceding pattern phrases, the "mid-line shift pattern" is named not for a letter

that it resembles, but for what it does. In dentistry, a dental "mid-line" refers to the line between a patient's top, middle two teeth or their bottom, middle two teeth. Kuo Decl., ¶ 52. If a patient's dental mid-line is "off-centered," treatment will require shifting the patient's teeth until the midline is centered with the target. Id., ¶ 53. For example, if a patient's lower midline is too far to the right, the patient's lower anterior teeth must move left. Id. And if those teeth need to move left, the left-most teeth in that arch must move first to avoid collisions. Id.

Figures 6A and 6B disclose two exemplary mid-line shift patterns and mirror how a skilled artisan would have understood the phrase. '444 pat., 10:57-60, 11:17-20. The figures depict moving teeth from one side of a patient's mouth to another in roughly sequential order.



Id., Figs. 6A, 6B. As the specification uses "mid-line shift" consistent with its plain and ordinary meaning, the Court should afford the phrase that meaning. Kuo Decl., ¶¶ 52-57.

ClearCorrect's arguments for its narrower definition fail for the same reasons as for the other pattern terms. Again, the specification describes ClearCorrect's purported definition as "exemplary." '444 pat., 10:22. And again, ClearCorrect's construction conflicts with an embodiment—Figure 6A's. Although ClearCorrect's construction would require that each tooth not begin moving until the half-way stage of each preceding tooth, Figure 6A depicts teeth 2(7),

1(8), 1(9), and 2(10) moving at once. *Id.*, Fig. 6A. And again, the specification repeatedly places "mid-line shift" in quotation marks without ever suggesting that their use is definitional. *See, e.g.*, 2:48, 5:53, 10:20, 10:57, 11:17-18.

4. The '444 Patent's Specification Discloses Adequate Structure for Each Challenged Means-Plus-Function Limitation

Patentees can claim their inventions as a "means or step for performing a specified function." 35 U.S.C. § 112(f). When a patentee does so, courts construe the claim limitation "to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." *Id.* "If the patentee fails to disclose adequate corresponding structure, the claim is indefinite." *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1352 (Fed. Cir. 2015). Courts may rely on expert testimony for what the specification's disclosures "would convey to one skilled in the art." *Sisvel Int'l S.A. v. Sierra Wireless, Inc.*, 82 F.4th 1355, 1368 (Fed. Cir. 2023).

The Federal Circuit has set out special rules for construing software means-plus-function claims. When a claim limitation covers a function performed by a general-purpose computer, the specification usually must disclose a corresponding algorithm. *See in re Katz Interactive Call Processing Pat. Litig.*, 639 F.3d 1303, 1316 (Fed. Cir. 2011). If a claim term requires an algorithm but the specification discloses none, the claim is indefinite. *See Net MoneyIN, Inc. v. Verisign, Inc.*, 545 F.3d 1359, 1367 (Fed. Cir. 2008).

On the other hand, "the specification need not disclose all the details of [an] algorithm to satisfy the definiteness requirement of [Section 112,] so long as what is disclosed would be sufficiently definite to a skilled artisan." *Sisvel*, 82 F.4th 1368. The patent need not "describe an algorithm if the selection of the algorithm or group of algorithms needed to perform the function in question would be readily apparent to a person of skill in the art." *Virtru Corp. v. Microsoft Corp.*, No. 22-cv-242-ADA, 2023 WL 11799421, at *4 (W.D. Tex. Jan. 22, 2023).

Not all claims covering software functions require disclosure of a corresponding algorithm. When claimed "functions can be achieved by any general-purpose computer without special programming . . . [,] it [is] not necessary to disclose more structure than the general-purpose processor that performs those functions." *Katz*, 639 F.3d at 1316.

a) The '444 patent's specification discloses adequate corresponding structure for each challenged limitation

For each of the following limitations, ClearCorrect contends that the specification fails to disclose adequate structure corresponding to the claimed function. ClearCorrect's argument, in essence, is that the '444 patent does not describe how to implement various functions at ClearCorrect's preferred level of granularity. Yet that merely means that Align's claims are broad, not that they are indefinite. As Align explains below, ClearCorrect has not carried its burden to prove that Align's claims are indefinite by clear and convincing evidence.

(1) "means for receiving an electronic representation of each dental object of the plurality of dental objects in relation to one another" ('444 patent cls. 15-28)

Align's Construction	ClearCorrect's Construction
A computing device and equivalents ³	Subject to § 112 ¶ 6
E.g., '444 patent, 5:12-	 <u>Function:</u> receiving an electronic representation of each dental object of the plurality of dental objects in relation to one another <u>Structure:</u> None
	Indefinite

When claimed "functions can be achieved by any general-purpose computer without special programming . . . , it [is] not necessary to disclose more structure than the general-purpose processor that performs those functions." *Katz*, 639 F.3d at 1316. In *Katz*, the function

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³ ClearCorrect falsely complains that Align did not identify the claimed functions. Br. at 19. To the contrary, Align told ClearCorrect that it agreed with ClearCorrect's identifications. § I.A.c, *infra*. The parties dispute only whether the specification discloses structure for those functions.

of "receiving" certain data "[could] be achieved by any general purpose computer without special programming." *Id.* Here, too, the disputed limitation requires no more than "receiving" certain data—a digital image of a patient's dentition—which a general-purpose computer can perform. '444 pat., 5:12-16. Under *Katz*, the '444 patent specification's disclosure of a general purpose "computing device and equivalents" suffices. *See* Singh Decl., ¶¶ 33-37.

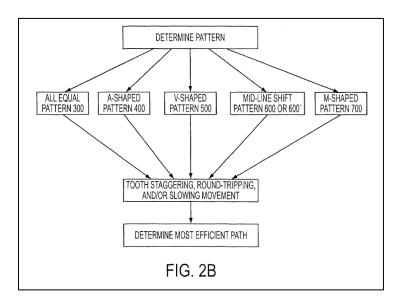
Although ClearCorrect contends that the '444 patent does not provide an algorithm for "how" the computer is configured to receive the data, Br. at 23, none is required. *See Katz*, 639 F.3d at 1316. A computer's ability to receive digital images is both undisputed and well-known. Singh Decl., ¶¶ 34, 36. And as ClearCorrect's own authority explains, although patentees must "disclose *some* structure," they "need not disclose details of structures well known in the art." *Function Media, L.L.C. v. Google, Inc.*, 708 F.3d 1310, 1318 (Fed. Cir. 2013).

In his declaration (but not ClearCorrect's opening brief), ClearCorrect's expert Dr. Xiong contends that the specification does not describe a general-purpose computer as receiving a representation of each tooth "in relation to one another." Ex. G, ¶ 44. Even if the Court ignores ClearCorrect's waiver of its expert's position by omitting it from its opening brief, ClearCorrect's expert is wrong. When the specification refers "an electronic representation of the patient's *teeth*" (plural) "in an *initial position*," it is referring to their relative positions. '444 pat., 5:13-14 (emphasis added); *see also* 3:36-38 ("FIG 1A illustrates the *initial positions* of the patient's *teeth* [plural]") (emphasis added); Fig. 1A (depicting teeth in relation to one another); Singh Decl., ¶ 37. ClearCorrect confirmed as much in its IPR petition against the '444 patent, writing, "[b]ecause the initial digital data set includes a model of the patient's teeth, each tooth in the model is represented in relation to each other tooth in the model." IPR2017-01829, Paper 1 at 24 (P.T.A.B. July 20, 2017) (ClearCorrect characterizing alleged prior art).

(2) "means for determining an order of movement for each respective dental object such that the dental objects avoid colliding with each other on their respective routes from said initial position to said desired final position" ('444 patent cls. 15-28)

Align's Construction	ClearCorrect's Construction
A computer program that performs the steps identified in Figure 2B and equivalents E.g., '444 patent, 5:19-22, 5:29-6:46, Fig. 2B	Subject to § 112 ¶ 6 Function: determining an order of movement for each respective dental object such that the dental objects avoid colliding with each other on their respective routes from said initial position to said desired final position. Structure: None Indefinite

Figure 2B depicts an algorithm corresponding to the claimed function:



As Figure 2B depicts, the first step is determining a specific pattern. *See* '444 patent, Fig. 4, 5:32-40, 6:15-26. Because the pattern defines when each tooth starts and stops moving (at least initially), it contributes to the order of each tooth's movement. *See* § I.A.3; Kuo Dec., ¶ 40.

As Figure 2B depicts, the software also performs staggering, round-tripping, or slowing "if the patient's teeth cannot be moved without colliding with and/or obstructing another tooth." '444 pat., 6:39-43. These techniques contribute to the order of teeth movement.

The specification explains to the skilled artisan exactly how to move each tooth to perform each of these techniques. *Id.*, 12:44-55. Staggering "delay[s] one or more teeth from moving." *Id.*, 12:44-48. Round-tripping encompasses pausing one tooth's movement while another passes by. *Id.*, 12:51-55. Slowing means that a tooth moves "at a rate less than the rate of other teeth" and thus moves for more stages than it otherwise would. *Id.*, 12:48-51. Moreover, as Figure 2B depicts, the software program then "determines the most efficient path to take," *id.*, 6:43-46, *i.e.*, from each tooth's initial position to its final position, *id.*, 5:40-41. Figure 2B's algorithm determines an order of movement for each respective dental object, such that the dental objects avoid colliding on their respective routes from said initial position to said desired final position. By doing so, it provides "adequate defining structure to render the bounds of the claims understandable." *Sisvel*, 82 F.4th at 1368; Singh Decl., ¶¶ 38-45.

ClearCorrect does not show otherwise. Although ClearCorrect alleges that Align failed to point to "any software algorithm that would avoid collisions," Br. at 24, that is exactly what Figure 2B depicts with its box reciting "TOOTH STAGGERING, ROUND-TRIPPING, AND/OR SLOWING MOVEMENT," see also '444 pat., 6:27-46. ClearCorrect's argument that the '444 patent does not describe that step at ClearCorrect's preferred level of granularity also fails. Br. at 24. A patentee need not produce a "highly detailed description of the algorithm to be used to achieve the claimed functions," as ClearCorrect's own authority explains. *Aristocrat Techs. Australia Pty Ltd. v. Int'l Game Tech.*, 521 F.3d 1328, 1338 (Fed. Cir. 2008).

Instead, satisfying § 112, ¶ 6 requires only a disclosure "sufficiently definite to a skilled artisan." *Sisvel*, 82 F.4th at 1368. Something as brief as an article's title can suffice to disclose a corresponding algorithm. *See Atmel Corp. v. Info. Storage Devices, Inc.*, 198 F.3d 1374, 1383-84 (Fed. Cir. 1999). A description of an algorithm can be equally brief. In *Typhoon Touch*

Technologies, Inc. v. Dell, Inc., for example, the specification's explanation that "[c]ross-referencing entails the matching of entered responses with a library of possible responses, and, if a match is encountered, displaying the fact of the match, otherwise alerting the user, or displaying information stored in memory fields associated with that library" was sufficient structure for a "means for cross-referencing." 659 F.3d 1376, 1385 (Fed. Cir. 2011). Using ClearCorrect's own analogy, the *Typhoon Touch* court did *not* require that the specification describe a specific combination of right turns, left turns, and straight movements.

ClearCorrect's other cases lend it no aid. In *Ibormeith IP, LLC v. Mercedes-Benz USA*, *LLC*, the *patentee* argued that the alleged corresponding structure merely identified options for certain variables. 732 F.3d 1376, 1381 (Fed. Cir. 2013). Align makes no such argument; it contends that practicing this limitation requires performing each step of Figure 2B. *Ergo Licensing, LLC v. CareFusion 303 Inc.* too is inapposite, as "there [was] no algorithm described in any form." 673 F.3d 1361, 1365 (Fed. Cir. 2012). The same was true of *Function Media* and *Aristocrat. See Function Media*, 708 F.3d at 1318 (noting that "there [was] no specific algorithm disclosed" for the "transmission function"); *Aristocrat*, 521 F.3d at 1337 (same). This case is different because Figure 2B supplies the requisite corresponding structure.

(3) "means for determining a route each respective dental object will move to achieve its respective final position" ('444 patent cls. 16-18)

Align's Construction	ClearCorrect's Construction
A computer program that is configured to segment an initial digital dataset into digital models of individual dental objects and gingival tissue, calculate a transformation for each dental object, and then calculate one or more intermediate positions for each dental object, taking into account any constraints imposed on the movement of dental objects and any collisions that might occur between dental objects as the dental objects move	Subject to § 112 ¶ 6 • Function: determining a route each respective dental object will move to achieve its respective final position • Structure: None

from one treatment stage to the next and equivalents	Indefinite
E.g., '444 patent, 3:19-24, 3:36-61	

The specification discloses the corresponding algorithm for this limitation. Singh Decl., ¶¶ 46-50. First, "[a] computer program segments [an initial digital dataset reflecting the initial position of each tooth] into digital models of individual teeth and the gingival tissue." '444 pat., 3:42-44. Next, the program compares the initial and final positions of each tooth and "calculat[es] transformations⁴ that will move the teeth from the initial to the final positions over desired treatment paths." *Id.*, 3:19-24; *see also id.*, 3:48-50 ("A human operator and/or a computer program manipulate the digital models of the patient's teeth to achieve the final tooth positions"). Finally, it "calculates one or more of the intermediate positions, taking into account any constraints imposed on the movement of the teeth" and "any collisions that might occur between teeth as the teeth move from one treatment stage to the next." *Id.*, 3:54-57. These "intermediate positions" define the route for each tooth.

ClearCorrect does not dispute that a computer program determines a route by computing intermediate positions for each tooth. Br. at 28. Instead, it complains that the specification does not say *how* to determine the transformations or route at its preferred level of granularity. *Id.* at 27-29. But again, "the specification need not disclose all the details of [an] algorithm to satisfy the definiteness requirement of [Section 112] so long as what is disclosed would be sufficiently definite to a skilled artisan." *Sisvel*, 82 F.4th at 1368. A skilled artisan would have understood that software performing the claimed steps—segmenting, computing transformations, and calculating intermediate positions—performs this limitation. Singh Decl., ¶ 50.

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⁴ A "transformation" is a change in orientation and position needed to move a virtual object from one position to another. *See* Singh Decl., ¶ 48.

ClearCorrect's cases are not to the contrary. ClearCorrect cites *BlackBoard, Inc. v.*Desire2Learn, Inc., for the proposition that a description of an "outcome" without also describing how to achieve it does not provide sufficient corresponding structure. 574 F.3d 1371, 1382 (Fed. Cir. 2009). Unlike in *BlackBoard*, however, the specification here provides a three-step algorithm for achieving the outcome of determining a route. Similarly, *Ibormeith* is of no help to ClearCorrect. There, the patentee argued that the alleged corresponding structure simply provided options for "taking into account" certain variables. 732 F.3d at 1381. Here, by contrast, Align has identified a "single, definite algorithm" comprising three steps. *Id.* As in *Typhoon Touch* (discussed *supra* § I.A.a)(2)) the Court should find this term not indefinite.

(4) "means for determining (a), (b), and (c) in relation to each of the other dental objects" ('444 patent cls. 17-18)

Align's Construction	ClearCorrect's Construction
A computer program that is configured to segment an initial digital dataset into digital models of individual dental objects and gingival tissue, calculate a transformation for each dental object, and then calculate one or more intermediate positions for each dental object, taking into account any constraints imposed on the movement of dental objects and any collisions that might occur between dental objects as the dental objects move from one treatment stage to the next and equivalents <i>E.g.</i> , '444 patent, 3:19-24, 3:36-61	Subject to § 112 ¶ 6 • Function: determining (a), (b), and (c) in relation to each of the other dental objects • Structure: None Indefinite

This limitation requires determining (a) a route, (b) total distance, and (c) a rate for each tooth in relation to other teeth. ClearCorrect's lone argument is that the preceding "means for determining a route . . . " term is indefinite. Br. at 28-29. As explained above, however, the specification adequately discloses a route-planning algorithm. 5 See § I.A.a)(3). That algorithm

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⁵ ClearCorrect does not dispute the sufficiency of the corresponding structure for the "total distance" and "rate" aspects of this limitation. Regardless, *see* §§ I.A.b)(5)-I.A.b)(6).

considers "any collisions that might occur between dental objects" and thus determines the route for each tooth in relation to other teeth. '444 pat., 3:52-56. A skilled artisan would have understood what was required to practice this claim term. Singh Decl., ¶¶ 51-55.

(5) "means for determining a rate at which each respective dental object will move along its respective route" ('444 patent cls. 16-18)

Align's Construction	ClearCorrect's Construction
A computer program that determines a rate at which each respective dental object will move along its respective route <i>E.g.</i> , '444 patent, 4:58-5:10	Subject to § 112 ¶ 6 • Function: determining a rate at which each respective dental object will move along its respective route • Structure: None Indefinite

Consistent with Align's construction, the corresponding structure of software running on a general-purpose computer suffices. *See* '444 pat., 4:58-5:10. The parties dispute only whether the specification must describe a detailed algorithm for the recited function. It need not.

Although Federal Circuit precedent requires disclosure of an algorithm, it "does not require that the patent *describe* an algorithm[,] if the selection of the algorithm or group of algorithms needed to perform the function in question would be readily apparent to a person of skill in the art." *Virtru.*, 2023 WL 11799421, at *4 (emphasis added). That is the case here. A skilled artisan reading the patent would have understood that determining the rate at which each respective dental object moves along its respective route involves a basic mathematical calculation, *viz.*, dividing the distance traveled by each tooth by the number of stages it moves. Singh Decl., ¶ 57 ("rate = distance / stage"). The '444 patent expresses the rate at which a tooth moves in units of "mm/stage," *i.e.*, distance in millimeters per stage. *See* '444 pat., 7:15-16. It also gives an example in which the rate is dependent on the number of stages. *Id.*, 6:60-61.

ClearCorrect's own alleged prior art also confirms that the "rate" was readily understood and easily calculatable. It describes the "speed for each movement" as "var[ying]" "[b]ased on the number of stages needed to complete the movement for each tooth." Ex. 4 at 106.

Accordingly, the specification's disclosures, combined with the skilled artisan's knowledge, adequately conveyed what was necessary to practice this claim limitation. Singh Decl., ¶¶ 56-61; *Virtru.*, 2023 WL 11799421, at *4. That structure is a computer program programmed to perform a readily apparent algorithm, *i.e.*, to determine the rate at which each respective dental object moves along its respective route.

(6) "means for determining a total distance each respective dental object will move" ('444 patent cl. 20)

Align's Construction	ClearCorrect's Construction
A computer program for determining a total distance each respective dental object will move and equivalents E.g., '444 patent, 4:58-5:10	Subject to § 112 ¶ 6 • Function: determining a total distance each respective dental object will move • Structure: None
	Indefinite

ClearCorrect's arguments for this limitation are the same as for the preceding limitation. A skilled artisan would have known that "determining [the] total distance each . . . dental object will move" requires no more than summing the distances traveled by each dental object during each stage. Singh Decl., ¶¶ 62-64. That is what "total distance" means. *Id.*, ¶ 63. Because that algorithm would have been apparent to a skilled artisan, the specification did not need to describe it; the specification's disclosure of software running on a general-purpose computer was enough. *See* '444 pat., 4:58-5:10; *Virtru*, 2023 WL 11799421 at *4.

(7) "means for adjusting at least one of the route and the rate of at least one dental object to avoid collision with at least one other dental object" ('444 patent cl. 18)

Align's Construction	ClearCorrect's Construction
A computer program that performs collision avoidance via round-tripping, staggering, or slowing, wherein the computer program first attempts staggering of the teeth movement, followed by slowing-down/interim key frames if the staggering does not avoid collisions, and then followed by round-tripping as a last resort and equivalents	Subject to § 112 ¶ 6 • Function: adjusting at least one of the route and the rate of at least one dental object to avoid collision with at least one other dental object • Structure: None
E.g., '444 patent, 12:41-65	Indefinite

This limitation requires performing collision avoidance via adjusting "at least one of the route and the rate of at least one dental object." That is exactly what the algorithm at column 12, lines 57-62 does by iteratively staggering, slowing, and round-tripping teeth. Singh Decl., ¶¶ 65-69. As noted above, staggering and slowing adjust a tooth's rate, while round-tripping adjusts its rate and route. "Staggering" delays a tooth from moving when it otherwise would. '444 pat., 12:44-48. "Slowing" means that a tooth moves more slowly than other teeth or even stops. *Id.*, 12:48-51. "Round-tripping" involves "moving a first tooth out of the path of a second tooth, and once the second tooth has moved sufficiently, moving the first tooth back to its previous position before proceeding to a desired final position." *Id.*, 12:51-55. Column 12's discussion of round-tripping, staggering, and slowing thus corresponds to the recited function.

ClearCorrect's various attacks on this algorithm fail. First, ClearCorrect contends that, under *SuperGuide*, the claim requires adjusting *both* the rate and the route. Br. at 31. But ClearCorrect does not explain why *SuperGuide* even applies to this limitation (as opposed to the "at least staggering and roundtripping" limitation discussed above). Regardless, "route" and "rate" are not categories from which selections are made, unlike in *SuperGuide*. *See* 358 F.3d at 886; *3rd Eye Surveillance*, 140 Fed. Cl. at 69-70 (distinguishing *SuperGuide* on this basis); *Radware*, 2014 WL 1572644, at *6-7 (same). Each tooth only has one route and can move at

only one rate at a time. The limitation thus requires adjusting *either* a tooth's route or rate; the corresponding algorithm need not do both.

Second, ClearCorrect argues that Align's algorithm is inadequate because its individual components do not independently avoid collisions. Br. at 32. That is beside the point; the issue is whether Align's identified algorithm *as a whole* accomplishes the recited function. It does.

Third, ClearCorrect complains that attempting to stagger, slow, and then round-trip is just "too vague." Br. at 32. Not so. Federal Circuit requires that an algorithm "render the bounds of the claim understandable to one of ordinary skill in the art." *Sisvel*, 82 F.4th at 1368. Align's algorithm does this. For example, software that tries to stagger before slowing would practice this claim term, but software that tries to slow before staggering would not.

Finally, both *Ibormeith* and *Function Media* remain inapposite. Unlike in *Ibormeith*, Align does not contend that the steps of its identified algorithm are merely optional. *Compare with* 732 F.3d at 1381. And unlike *Function Media*, Align has identified a corresponding algorithm. *Compare with* 708 F.3d at 1318.

(8) "means for determining an optimal number of stages for the order of movement of the dental objects" ('444 patent cls. 19-20)

Align's Construction	ClearCorrect's Construction
A computer program that determines an optimal number of stages by selecting the largest number of the minimum number of stages needed to place the dental objects in their final, desired positions and equivalents <i>E.g.</i> , '444 patent, 15:6-20	Subject to § 112 ¶ 6 • <u>Function</u> : determining an optimal number of stages for the order of movement of the dental objects • <u>Structure</u> : None Indefinite

The '444 patent explains that the optimum number of stages is the "largest number of the minimum stages needed to place the patient's teeth in their final, desired position." '444 pat.,

15:9-12; see § I.A.2, supra. Consistent with that disclosure, software that selects the largest number of the minimum stages necessary to place the patient's teeth in their final, desired position constitutes the corresponding structure for the recited function. See Singh Decl., ¶ 71.

Unable to dispute that Align's identified algorithm constitutes corresponding structure, ClearCorrect again challenges whether it provides sufficient detail. Br. at 23-24. But again, "the specification need not disclose all the details of [an] algorithm to satisfy the definiteness requirement of [Section 112] so long as what is disclosed would be sufficiently definite to a skilled artisan." *Sisvel*, 82 F.4th at 1368. Here, the disclosure at column 15, lines 16-20 adequately conveys what is necessary to practice this limitation. Singh Decl., ¶¶ 70-73. Claim 20, which is part of the specification, confirms this. It explains that the "minimum number of stages" is determined by adding the number of "movement stages" and "non-movement stages." *Blackboard*, in which the patentee identified an algorithm that specified the outcome but not how to achieve it, therefore is inapposite. *See* 574 F.3d at 1383.

(9) "means for ordering the movement of the dental objects in a V-shaped pattern" ('444 patent cl. 22)

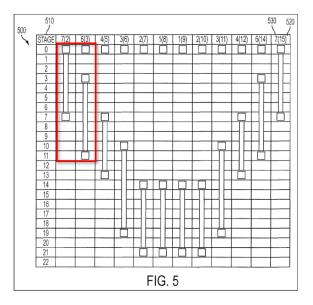
Align's Construction	ClearCorrect's Construction
a computer program configured	Subject to § 112 ¶ 6
to utilize the pattern depicted in Figure 5 and equivalents	• <u>Function</u> : ordering the movement of the dental objects in a V-shaped pattern
E.g., '444 patent, 9:12-15, 9:42-	• <u>Structure</u> : None
44, Fig. 5	Indefinite

Figure 5 (annotated below) provides the corresponding algorithm for ordering the movement of dental objects in a V-shaped pattern. Singh Decl., ¶¶ 74-76. The X-axis identifies each tooth using "the standard teeth numbering system 520." '444 pat., 10:45-49. The Y-axis denotes the number of the treatment stage. *Id.* Together, the X- and Y-axes indicate the

movement of teeth during specified stages, with the bounded squares identifying the start and end stage. For example, in Figure 5, tooth 7(2)'s movement starts at stage 0 and ends at stage 7. Tooth 6(3)'s movement starts at stage 3 and ends at stage 11. The overall pattern of movement

takes the shape of the letter "V." Figure 5 thus discloses an algorithm for ordering the movement of dental objects in a V-shaped pattern. *Id.*, 9:42-44.

Contrary to ClearCorrect's argument,
Figure 5 does not just show "the result" of
ordering teeth in a "V-shaped pattern," Br. at 35;
it shows *how* to achieve this movement, *e.g.*,



teeth 7(2) and 7(15) move first, and then teeth 6(3) and 6(14), and so on. Nor does *Aristocrat* help ClearCorrect. In *Aristocrat*, the claimed functions required "control[ling] images," "pay[ing] a prize," and "defin[ing] the pay lines." 521 F.3d at 1331, 1335. The Federal Circuit held that the patent's figures—which merely disclosed how "player selections translate[d] to possible winning combinations"—did not constitute corresponding structure for all of those functions. Here, by contrast, Figure 5's algorithm corresponds to the recited function of "ordering the movement of . . . dental objects in a V-shaped pattern."

(10) "means for round tripping at least one dental object" ('444 patent cl. 27)

Align's Construction	ClearCorrect's Construction
A computer program configured to move a first tooth out of the path of a second tooth, and once the second tooth has moved sufficiently, move the first tooth back to its previous position before proceeding to a desired final position of the first tooth and equivalents	Subject to § 112 ¶ 6 • Function: round tripping at least one dental object • Structure: None

The '444 patent discloses a corresponding algorithm for "round tripping at least one dental object." Singh Decl., ¶¶ 77-79. In particular, it describes accomplishing round-tripping by (1) "moving a first tooth out of the path of a second tooth," (2) "once the second tooth has moved sufficiently, moving the first tooth back to its previous position," and (3) "proceeding to a desired final position of that first tooth." '444 patent, 12:51-55.

ClearCorrect is wrong that this algorithm merely "restates the [recited] function." Br. at 36. Align's algorithm explains, in multiple steps, how to accomplish "round-tripping at least one dental object." ClearCorrect is equally wrong that Align's proposed construction seeks to claim "all possible means of achieving" roundtripping. As the PTAB observed during the IPR proceedings, "round tripping" in the '444 patent is "something different" than roundtripping in ClearCorrect's IPR art (*i.e.*, Chishti '511). Ex. C at 16. Finally, ClearCorrect's authorities still do not help it. Unlike in *Function Media*, *Aristocrat*, and *In re Aoyama*, Align's algorithm indicates how to round-trip. *See Function Media*, 708 F.3d at 1318 ("no specific algorithm disclosed" for "transmission function"); *Aristocrat*, 521 F.3d at 1334 (algorithm did not cover recited functions); *Aoyama*, 656 F.3d 1293, 1298 (Fed. Cir. 2011) (flow chart "only present[ed] several results to be obtained, without describing how").

b) ClearCorrect Is Wrong that Align Expanded Its Means-Plus-Function Claims by Paraphrasing the Specification

Separate from its specific indefiniteness arguments, ClearCorrect takes issue with the form of Align's constructions. ClearCorrect first contends that Align's constructions improperly paraphrase the specification's corresponding structures. Br. at 19-21. But ClearCorrect's basic premise—that paraphrasing is inappropriate—is faulty. Because "the specification need not disclose all the details of [an] algorithm," it must equally be true that the identified

corresponding structure need not quote the specification verbatim. *Sisvel*, 82 F.4th at 1368 (disclosure must simply be "sufficiently definite to a skilled artisan"). ClearCorrect identifies no Federal Circuit case that imposes such a requirement, nor could it. Br. at 19-21. As the Federal Circuit recognized in *Atmel*, even the title of an article may suffice to identify the corresponding structure to the skilled artisan. *See* 198 F.3d at 1382.

ClearCorrect next complains that Align's framing of its constructions is unclear or vague.

That is equally untrue. Align's constructions summarize—tersely, and in a form readily intelligible to the jury—which structures in the specification correspond to the recited functions.

Its construction of claim 15's "means for determining an order of movement" is illustrative:

Disputed Term	Align's Construction
"means for determining an order of movement for each respective dental object such that the dental objects avoid colliding with each other on their respective routes from said initial position to said desired final position" ('444 patent cls. 15-28)	a computer program that performs the steps identified in Figure 2B and equivalents E.g., '444 patent, 5:19-22, 5:29-6:46, Fig. 2B

Align's construction identifies the corresponding structure for the recited function of "determining an order of movement" as Figure 2B's algorithm. To preempt ClearCorrect's complaint that a skilled artisan would not have known how to implement that algorithm, Align also points to the specification's prose accompanying Figure 2B. Align's use of prose to define its proposed construction does not expand its construction, but clarifies it.

ClearCorrect's contrary examples do not demonstrate that Align's constructions are impermissibly unclear or vague. Br. at 20-21. As noted, Align's construction of claim 20's "means for determining a total distance each respective dental object will move" is a computer program that performs that function. This is because, for that recited function, the corresponding structure is basic and well-known. A description in the specification beyond the recitation of the

function itself therefore is not necessary. *See Virtru*, 2023 WL 11799421 at *4; § I.A.a)(6), *supra*. Similarly, Align's construction of claim 15's first "means for receiving an electronic representation" is simply a "computing device and equivalents" for the same reason; nothing more is required. *See In re Katz*, 639 F.3d at 1316; § I.A.a). That the corresponding structure for both limitations is broad does not make them indefinite.

Finally, ClearCorrect's suggestion that Align needed to identify the recited function for each means-plus-function limitation misses the mark. Br. at 19-21. When the parties met and conferred on these limitations, Align *agreed* with ClearCorrect's identification of the recited functions. Ex. 3 at 1. Align thus had no reason to repeat those functions with each of its proposed constructions. The parties' dispute turns only on whether the patent discloses adequate corresponding structure, and it does.

B. U.S. Patent No. 10,791,936

The '936 patent discloses a system for scanning and rescanning a patient's teeth. In broad strokes, claim 1 requires a hand-held intraoral scanner, a computer, and software. The computer receives a first scan of a patient's teeth from a hand-held scanner and then, based on that data, displays a model of the patient's teeth. The computer then receives a second scan (*e.g.*, after a physical change to the patient's mouth) and replaces part of the original digital model.

The patent's other claims provide refinements to or variations on claim 1. For example, dependent claims 4, 5, and 7 refine claim 1's "replacing" step. In claim 4, the instructions to "replace" include instructions to "register" the second scan data with the existing digital model. In claim 6, they include instructions to "stitch a portion of the received second scan data with the model." In claim 7, they include instructions to "discard a remainder of the received second scan data." In contrast to independent claims 1 and 9, claim 17, omits the requirement that the "second scan data" include "surface data of a physically changed portion" to the patient's mouth.

ClearCorrect's constructions depart from the claims' plain and ordinary meaning in two ways. First, ClearCorrect proposes narrowing "replac[ing]" to "registration"—a requirement from a dependent claim. But importing limitations from a dependent claim into an independent claim is disfavored. Second, although independent claim 17 does not require that the "second scan data" include "surface data of a physically changed portion," ClearCorrect transplants that requirement from claim 1 into claim 17. Claim differentiation equally disfavors that approach.

1. "replace [replacing] at least a portion of the [removed] surface portion of the model [...] using the received second scan data [at least a portion of the second scan data]" ('936 patent cls. 1-20)

Align's Construction	ClearCorrect's Construction
No construction necessary (plain and ordinary meaning)	[register] / [registering] the [received] second scan data with a retained portion of the model after removing the scan data of the removed surface portion

ClearCorrect proposes narrowing independent claims 1, 9, and 17's "replacing" to require "registering" a second image against a first. The plain language reveals why this would be error.

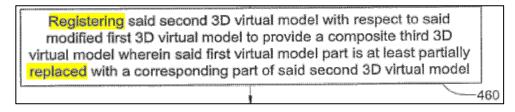
Claims 4, 6, and 7 are directly or indirectly dependent on independent claim 1.

Dependent claim 4 clarifies that claim 1's "instructions to replace the at least the portion of the removed surface portion of the model using the received second scan data comprise instructions to register the received second scan data with the model." '936 pat., cl. 4 (emphasis added).

Dependent claim 4 thus makes clear that "replacing" and "registering" are not synonymous, as the latter is narrower than the former. Likewise, dependent claim 6 clarifies that claim 1's "instructions to replace" comprise instructions to "stitch a portion of the received second scan data." Id., cl. 6. And dependent claim 7 clarifies that claim 1's "instructions to replace" comprise instructions to "discard a remainder of the . . . data." Id., cl. 7. But neither "stitching" nor "discarding" is the same as "registering."

Individually or collectively, the dependent claims show that "replacing" is broader than and different from "registering." *See CAE Screenplates Inc. v. Heinrich Fiedler GmbH & Co.*, 224 F.3d 1308, 1317 (Fed. Cir. 2000) (explaining that "different terms in . . . claims connotes different meanings"). The dependent claims therefore refute ClearCorrect's insistence on equating those phrases.

ClearCorrect's construction also runs afoul of the specification. Although ClearCorrect contends that Figure 1 is supportive, that figure hurts, not helps, ClearCorrect. Element 460 of Figure 1, highlighted below, underscores that "registering" is just part of "replacing":



'444 pat., Fig. 1 (cropped and highlighted).

ClearCorrect also nonsensically argues that the specification only teaches "replacing" via "registration." Br. at 39. Not so. In the specification's "Embodiment A," part of a first digital model is "deleted," a second virtual model is "register[ed]" against the first, and the digital models are "then stitched" together. '936 pat., 14:45-15:36. Summarizing these steps, the specification explains that the "modified first virtual model . . . thus *replaces* the undesired part . . . of the original virtual model." *Id.*, 15:28-30. The specification thus shows that "replacing" is broader than "registering," not narrower or synonymous.

Align's agreement to 3Shape's compromise construction in *Align Tech. v. 3Shape A/S*, No. 20-cv-979-ADA (W.D. Tex.), does not warrant adopting that construction here. That construction is not binding, as the Court never entered a written *Markman* order in that case. For that same reason, ClearCorrect's authorities involving final constructions—*Immersion Corp.*, *Parkervision, TQP Development*, and *Finisar Corp.*—are inapposite. Br. at 40. And as

ClearCorrect's *TQP* case astutely observes, "prior orders in related cases do not bar the Court from conducting additional construction in order to refine earlier claim constructions." *TQP Development, LLC v. Intuit Inc.*, No. 12-cv-180-WCB, 2014 WL 2810016, at *6 (E.D. Tex. June 20, 2014). Refinement is warranted here, where the *3Shape* construction contradicts the claim language and specification.

Finally, ClearCorrect misleadingly claims that, "[d]uring the meet-and-confer process,

Align . . . identified [no] reason to depart from the prior claim construction." Br. at 40. But

ClearCorrect proposed the *3Shape* construction the day before it filed its opening claim

construction brief—after the pre-briefing meet-and-confer process. ClearCorrect also omits that,

until its proposal that day, it had never proposed substituting "replace" with "register."

2. "second scan data of the patient's teeth" ('936 patent cls. 17-20)

Align's Construction	ClearCorrect's Construction
No construction necessary (plain	"new scan data of the patient's teeth after the patient's
and ordinary meaning)	intraoral cavity itself has physically changed"

Some claims of the '936 patent (*e.g.*, independent claims 1 and 9) require that the "second scan data of the patient's teeth" be taken after a "physical[] change[]" to the patient's intraoral cavity. *See*, *e.g.*, '936 pat., cl. 1 ("receive second scan data . . . including surface data *of a physically changed portion* of the patient's intraoral cavity") (emphasis added). Others (*e.g.*, independent claim 17) do not. *Compare with id.*, cl. 17 ("receive second scan data of the patient's teeth from the hand-held intraoral scanner). The inclusion of this "physical change" requirement in some claims but not others reinforces that it would be error to graft it into all claims, including claim 17. *See CAE Screenplates*, 224 F.3d at 1317 ("different terms in . . . claims connotes different meanings").

Recognizing that the plain language and specification do not support including claim 17's

"physical change" requirement in all claims, ClearCorrect invokes prosecution disclaimer. Per ClearCorrect, Align acknowledged in the prior '936 IPR proceedings that the "second scan data" includes "surface data of a physically changed portion of the patient's intraoral cavity." Ex. O at 6-7 (characterizing original Examiner's statements in the Notice of Allowance).

ClearCorrect ignores that Align's remarks focused on "independent claims 1 and 9"—not independent claim 17. *Id.* Align did not substantively address claim 17 until *thirty pages* later. When Align finally discussed claim 17 at page 36 of its Preliminary Response, it acknowledged only the original Examiner's observation that claim 17's "second scan data" requirement is "similar" to claims 1 and 9's. *Id.* at 36. Align explained that this was because claim 17's "second scan data" "requires that the . . . data (which the remaining limitations indicate is the scan data used to replace removed data from the first scan data's model) . . . be obtained after removing the 'portion of the model' generated based on the first scan data." *Id.* Summarizing, Align concluded that, "like claims 1 and 9, claim 17 requires obtaining new scan data to update an identified portion of an earlier scan." *Id.*

Absent from Align's IPR discussion of claim 17's "second scan data" was any acknowledgment that it *also* involved a "physically changed portion." Nor did Align distinguish claim 17 from the prior art on that basis. Instead, Align explained that the prior art did not disclose receiving the "second scan data" after the "first scan data," as claim 17 requires. *Id.* at 37. Because Align's comments about claim 17's "second scan data" in the prior IPR proceedings did not constitute a "clear and unmistakable" disclaimer, importing claims 1 and 9's

⁶ Align does not dispute that claim 17's "second scan data" must be received after the "first scan data." '936 pat., cl. 17 ("after removing the portion of the model [based on the first scan data], receive [the] second scan data") (emphasis added). As the plain claim language already makes that requirement clear however, no construction is required.

"physically changed" requirement into claim 17 would be improper. *Thorner*, 669 F.3d at 1366.

Even if Align's remarks regarding claims 1 and 9 applied equally to claim 17, that still would not give rise to prosecution disclaimer. In its Preliminary Response in the IPR proceeding, Align presented the original Examiner's statements in the Notice of Allowance only to reinforce his "underst[anding] that the language of the claims provides a temporal relationship between the first and second scans." Ex. O at 7 (also explaining that the "second scan" is a "post-change" scan[,] while the "first scan" is an "initial scan"). Align never suggested that claim 17 somehow requires a "physically changed portion"—especially as its plain language does not include that requirement.

None of ClearCorrect's authorities lends it any aid. *Aylus Networks, Inc. v. Apple Inc.* only confirms that, "when a prosecution argument is subject to more than one reasonable interpretation, it cannot rise to the level of a clear and unmistakable disclaimer." 856 F.3d 1353, 1363 (Fed. Cir. 2017). *Ramot at Tel Aviv Univ. Ltd. v. Cisco Sys., Inc.* stands for the unremarkable proposition that IPR statements can give rise to disclaimer. No. 19-cv-225-JRG, 2020 WL 2517581, at *16 (E.D. Tex. May 15, 2020); *see Grecia Estate Holdings LLC v. Meta Platforms, Inc.*, 605 F. Supp. 3d 905, 915 (W.D. Tex. 2022) (same). And *David Netzer Consulting Eng'r LLC v. Shell Oil Co.* is distinguishable on its face. There, the Federal Circuit found prosecution history disclaimer where the patentee expressly distinguished its invention from a conventional method during prosecution. 824 F.3d 989, 995-96 (Fed. Cir. 2016). Align did not act analogously here.

Last, in a lengthy footnote, ClearCorrect theorizes that the original Examiner must have committed an "oversight" by allowing claim 17 without the same "physically changed" requirement as claims 1 and 9. Br. at 42, n.7. ClearCorrect's theory proves both too much and

too little. Its premise—that claim 17's "second scan data" is necessarily broader than the same limitation in claims 1 and 9—confirms that claim 17's "second scan data" does not include a "physically changed" requirement. ClearCorrect's assumption that the original Examiner necessarily allowed claim 17 based on claim 1 and 9's "physical change" requirement also is rank speculation. Br. at 38. The Examiner, who was not obligated to recite any of his reasoning for allowing claim 17, may have done so for a different reason altogether. *See* 37 C.F.R. § 1.104(e) (examiner "may set forth [his or her] reasoning") (emphasis added).

Because the plain language and specification do not support importing the "physical change" requirement from claims 1 and 9 into claim 17 and because Align did not commit prosecution history disclaimer, the Court should adopt Align's construction.

C. The Court Should Not Consider the Terms in ClearCorrect's "Appendix A"

The Court permitted ClearCorrect to brief up to eighteen terms. ECF No. 120. In defiance of the Court's order, ClearCorrect addressed eighteen terms in the body of its brief—and then raised thirteen more in its "Appendix A." Br., App'x A. In its appendix, ClearCorrect argues that the thirteen additional terms are indefinite for the same reasons as the eighteen other terms and cites to its expert's supportive declaration. *Id.* (identifying same).

ClearCorrect's arguments for the thirteen additional terms are procedurally defective on multiple grounds, and the Court should not consider them. As noted, ClearCorrect's submission of these additional arguments in an appendix flouts the Court's October 29, 2024 order.

Although ClearCorrect (not Align) bears the burden of proving indefiniteness by clear and convincing evidence, ClearCorrect did not substantively brief the additional terms and has thus waived related arguments. *See Cinel v. Connick*, 15 F.3d 1338, 1345 (5th Cir. 1994) ("A party who inadequately briefs an issue is considered to have abandoned the claim"). Finally,

considering these terms would prejudice Align, which cannot address them in the same limited space as ClearCorrect's already expanded list of eighteen terms.

III. CONCLUSION

ClearCorrect, which bears the burden of proving indefiniteness by clear and convincing evidence, has not done so for any limitation in the '444 patent. Nor has it justified its proposals to narrow multiple terms from the '444 and '456 patents. As for the '936 patent, ClearCorrect's attempt to import limitations from different claims and reliance on prosecution history disclaimer are improper. Align urges the Court to adopt its constructions.

Dated: November 25, 2024 MORRISON & FOERSTER LLP,

By: /s/ Rich S.J. Hung

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CERTIFICATE OF SERVICE

I hereby certify that on November 25, 2024, a true and correct copy of the foregoing document was served electronically, via ECF, on all counsel of record who are deemed to have consented to such service under the Court's local rules.

/s/ Rich S.J. Hung Rich S.J. Hung